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hoping that eight little owls would later emerge from that dark cavity and thus augment the bird population of that section? Nay, verily, for I have the eight, now pearly and shiny and clean, where they can do much more good than as well developed and mature owls. To the man with a hobby, a set of eggs in the cabinet is worth more than a flock of birds in the bush.

And now you have two very easy solutions of the proposed problem—a problem in indeterminates, and hence capable of many answers.

Lewistown, Montana.

THE USE OF MAGPIES' NESTS BY OTHER BIRDS

By ROBERT B. ROCKWELL

WITH ONE PHOTO BY THE AUTHOR

MUCH has been said (and much has been left unsaid) regarding the manifold depredations of the Black-billed Magpie (*Pica pica hudsonia*), and these incriminating utterances are built on a firm foundation of truth. It is consequently with a sense of relief that we are able to turn our attention to a topic in which this interesting bird does not play the role of heavy villain, and particularly in view of the fact that in this instance he appears as the benefactor of the other birds, a condition of affairs diametrically opposed to his normal attitude.

It is in the construction of a fairly permanent place of refuge for many species of birds that the magpie does much toward counter-balancing his many bad habits, and predatory tendencies. The great heavy nests, so beautifully cupt and lined inside, so wonderfully domed over and walled up outside, and withal so remarkably constructed as to withstand the ravages of the elements for years, constitute a veritable bird palace for a number of species whose natural ability as architects is a negligible quantity.

As a haven of safety during sudden storms or unlookt-for spells of severe weather, there are indeed few species of perching birds that do not find in the abundant abandoned magpie's nests an important addition to the many protected safety stations a wise Nature provides for her feathered children. During severe rain or hail-storms robins, blackbirds, bluebirds, warblers, and in fact all those species that frequent the timbered creek-bottoms in the territory where the magpie is common, make frequent use of these great nests.

A few species utilize the abandoned nests continuously, but these birds are necessarily few in number, as they are birds that restrict themselves to a given locality. To this class belong the Western Horned Owl, the Long-eared Owl and the Rocky Mountain Screech Owl, the two former of which spend nearly their entire time during the day in these welcome retreats, while the latter species makes frequent use of them when not occupying a cavity in a tree. It is a rather amusing spectacle to see a round, fluffy little screech owl (dislodged from his cosy corner in a hollow tree) making desperate efforts to reach the nearest magpie nest before the noisy throng of mischief-loving magpies overtakes him, and even more comical to see the plain look of disappointment and incredulity upon the "countenances" of the pursuers, as the owl reaches the welcome refuge and instantly merges himself into his surroundings; for strange as it may seem magpies will not

follow an owl into an abandoned nest, and seem utterly at a loss to understand the prompt disappearance of the object of their pursuit.

It is, however, in furnishing an ideal nesting site for several species of birds that the magpie bestows his greatest gift upon his bird neighbors.

As has been mentioned before the two species whose occupancy of magpie's nests is most prevalent are the Long-eared Owl and the Western Horned Owl. Both of these birds are notoriously averse to anything that bears a semblance to work, and the substantial last year's nests of the magpie furnish an ideal receptacle for the great white eggs and the fluffy youngsters.

Very little repairing is done to the abandoned structure preparatory to laying the eggs. A few feathers from the parent's breast, and possibly those of some bird which has fallen a prey to the owl, together with the accumulation of dead leaves, dirt and refuse found in old nests, form the "lining" upon which the eggs are laid. Capt. Bendire in his "Life Histories" states that the Western Horned Owl deposits its eggs "occasionally inside but more often on the broken-down roof of these bulky structures." This statement will probably apply equally well to the Long-eared Owl as I have yet to find the first set of these eggs laid in a magpie's nest which was domed over, altho the owls frequently make use of the interior of rooft nests as hiding places.

Owing to the nature of the timber thruout a large portion of western America the great majority of magpie's nests range in high from 15 to 25 feet above ground, altho occasional nests are encountered ranging upward to at least 60 feet above ground. However, the high nests do not seem to be preferred by the above mentioned species, or in fact by any of the following mentioned species and it is safe to say that practically all birds occupying magpie nests utilize nests varying from 15 to 30 feet above the ground.

The Rocky Mountain Screech Owl, like all of the genus *Otus*, nests almost entirely in natural cavities or deserted woodpecker's nests and I have never been fortunate enough to discover a nest in any other situation; but Bendire in his



A MAGPIE'S NEST APPROPRIATED BY A PAIR OF
SPARROW HAWKS NEAR DENVER, COLORADO

"Life Histories" states that this subspecies *does* appropriate deserted nests of the magpie for a nesting site and quotes such excellent authorities as W. G. Smith, Dennis Gale and A. W. Anthony in support of the statement, and while he does not describe the nest in detail it is perfectly reasonable to assume that the details of the nesting site would differ very little if any from that of the two preceding closely allied species.

Very similar to the Screech Owl in its habits of nidification is the Sparrow Hawk, and this noisy little tyrant of the woodland, while ordinarily choosing a hollow tree for his nesting site, not infrequently takes possession of some deserted magpie's nest, where after a few very crude repairs are made, the rusty colored eggs are deposited. The Sparrow Hawk, unlike the preceding species, seems to prefer nests which are rooft over, and instances where the eggs are deposited in open nests are quite rare. It is of some interest to note that Sparrow Hawks nesting in this manner are much more timid than those nesting in cavities, and whereas it is a common occurrence to find a brooding female so fearless that it is necessary to remove her from her eggs in a cavity, it is seldom that one can approach within thirty yards of a bird brooding in a magpie's nest without flushing it. Apparently the bird does not feel perfectly secure in a location which is not altogether natural to the inherited instincts of the species.

Another bird, similar to the preceding tho not nearly so common, is the Sharp-shinned Hawk, and this bird occasionally lays its eggs in deserted nests of the magpie. Davie in his "Nests and Eggs of North American Birds" mentions a nest found by Chas. F. Morrison at Fort Lewis, Colorado, in a "dilapidated magpie's nest, the archt roof of which had fallen in and formed a hollow, which was lined with a few feathers upon some dead leaves."

Thus far all of the birds mentioned in this connection are raptorial birds, which with the exception of the Sharp-shinned Hawk are practically devoid of the nest-building instinct; but these great nests we are considering furnish a home not only for this class of birds but also for some species in which the nest-building instinct is fully developed. Bendire mentions a nest of the Mourning Dove built on the broken-down top of a magpie's nest at Fort Harney, Oregon, and during the spring of 1908 Mr. George Richards of Littleton, Colorado, found a beautifully constructed nest of the Bronzed Grackle, cosily esconced in the nest cavity of a practically new and well constructed magpie's nest.

During the spring of 1907 a magpie's nest at Barr, Colorado, was regularly observed from the time the first rude platform of sticks was put in place early in March until a noisy and very hungry brood of eight young ones was launched forth into the world in early May. Within a week of the time that the young magpies left the nest, an industrious pair of English Sparrows began the construction of one of their bulky nests in the interior of the magpie's nest, and when, some two weeks later, it was decided, for obvious reasons, that the sparrow family must move we were greatly surprised to find a partially incubated egg of the Cowbird, in the nest of the English Sparrow.

Besides the species here named that are known positively to make use of deserted nests of the magpie, there are several species whose characteristic nesting habits make it entirely probable that they also occasionally make use of such nesting sites. For example the Swainson Hawk is known to make frequent use of deserted nests of the crow, and the Turkey Vulture has been known to utilize old nests of hawks and herons but the species enumerated furnish abundant proof that in one way at least the magpie partially atones for the many sins that Nature has made him heir to.

Denver, Colorado.